UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,344	12/17/2001	Hirokazu Miwa	0941.66061	7994

7590 03/07/2006

Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
Suite 2500
300 South Wacker Dr.
Chicago, IL 60606

EXAMINER	
LAO, LUN YI	

ART UNIT	PAPER NUMBER
2677	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,344	MIWA ET AL.	
	Examiner	Art Unit	
	LUN-YI LAO	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "the number of the driving devices used for driving each data signal line is controlled in accordance with a particular type of the display part, and wherein control of the number of driving devices is made with the use of a switch signal" cited in claim 1 is confusing since the specification only disclose a plurality of driving devices(DRV1-DRV3) together simultaneously driving each data line(DL) and each driving devices(DRV1-DRV3) having number of driving blocks(BL1, BL2 ... BL8) is controlled in accordance with a particular type of the display part, and wherein control of the number of driving blocks(BL1, BL2 ... BL8) is made with the use of a switch signal(SBL1, SBL2 ,,, SBL8)(see figures 3-4, 12-13 and paragraphs 13,81 and 107-117).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura(6,091,392) in view of Murade(6,531,996) and Ichikawa et al(5,028,916).

As to claims 1 and 4, Imamura teaches a liquid crystal display having a plurality of data signal lines(column lines) and a driving part(5) driving data signal lines(column lines) by supplying a plurality of sets of same image display data to each data line simultaneously so as to increase the driving capability(see figures 1, 3; column 2, lines 26-29 and lines 59-68; and column 3, lines 1-8). Imamura teach the number of the driving devices(upper driving device(2-5) and lower driving device(2-5) used for driving each data signal line is controlled in accordance with a particular type of display part(resolution640X400 or color LCD display with narrow electrode pitches)(see figure2 1-2; column 1, lines 34-36 and column 4, lines 59-61).

Imamura fails to disclose a plurality of driving devices disposed on the same side of data signal lines; number of block drivers and the control of the number of driving device is made with the use of a switch signal.

Murade teaches an LCD display for disposing a plurality of data driving devices(VID1-ViD6, 103h, 103g) on the same side of the display signal line(column line)(see figures 14-15 ; abstract and column 28, lines 53-64). It would have been obvious to have modified Imamura with the teaching of Murade et al, since the data driving devices mounted on the same side of data lines would be more easy for assembly, repair and replace.

Ichikawa et al teach a data driving device having plurality of driving blocks(T1'-T4') is controlled in accordance with a particular type of the display part, and wherein control of the plurality of driving blocks(T1'-T4') is made with the use of a switch signal(G1-G4)(see figures 1, 16-17 and column 9, lines 15-62). It would have been obvious to have modified Imamura as modified with the teaching of Ichikawa et al, so as to provide a fast and efficient display drive operation with a simplified circuit configuration(see column 2, lines 3-6).

As to claim 4, Ichikawa et al teach an LCD display comprising a wiring part integrated with a display part on a substrate(14)(see figures 1, 7-11; column 7, lines 39-68 and column 8, lines 1-33). It would have been obvious to have modified Bennett et al as modified Imamura as modified with the teaching of Ichikawa et al, so as to eliminate cumbersome interconnection between the display panel and the drive circuit section, and improve operation reliability, as well as a low assembly cost(see column 8, lines 18-33).

5. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imamura(6,091,392) in view of Maekawa et al(5,686,936) and Ichikawa et al(5,028,916).

As to claims 1 and 4, Imamura teaches a liquid crystal display having a plurality of data signal lines(column lines) and a driving part(5) driving data signal lines(column lines) by supplying a plurality of sets of same image display data to each data line simultaneously so as to increase the driving capability(see figures 1, 3; column 2, lines 26-29 and lines 59-68; and column 3, lines 1-8).

Imamura fails to disclose a plurality of driving devices disposed on the same side of data signal lines; number of block drivers and the control of the number of driving device is made with the use of a switch signal.

Maekawa et al teach an LCD display for disposing a plurality of driving devices(2, 5) on the same side of the display signal line(column line)(see figure 1 and column 4, lines 46-50). It would have been obvious to have modified Imamura with the teaching of Maekawa et al, since Maekawa et al have disclosed the driving devices could be mounted on opposite side or same side(see column 4, lines 46-50) and the driving devices mounted on the same side of data lines would be more easy for assembly, repair and replace.

Ichikawa et al teach a data driving device having plurality of driving blocks(T1'-T4') is controlled in accordance with a particular type of the display part, and wherein control of the plurality of driving blocks(T1'-T4') is made with the use of a switch signal(G1-G4)(see figures 1, 16-17 and column 9, lines 15-62). It would have been

obvious to have modified Imamura as modified with the teaching of Ichikawa et al, so as to provide a fast and efficient display drive operation with a simplified circuit configuration(see column 2, lines 3-6).

As to claim 4, Ichikawa et al teach an LCD display comprising a wiring part integrated with a display part on a substrate(14)(see figures 1, 7-11; column 7, lines 39-68 and column 8, lines 1-33). It would have been obvious to have modified Bennett et al as modified Imamura as modified with the teaching of Ichikawa et al, so as to eliminate cumbersome interconnection between the display panel and the drive circuit section, and improve operation reliability, as well as a low assembly cost(see column 8, lines 18-33).

Response to Arguments

6. Applicant's arguments with respect to claims 1 and 4 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that Imamura and Maekawa do teach driving part driving each data signal line by using a plurality of driving device together simultaneously so as to increase the driving capability and the driving devices disposed on the same side of the data signal line on page 4-6. The examiner disagrees with that since Imamura teaches a liquid crystal display having a plurality of data signal lines(column lines) and a driving part(5) driving data signal lines(column lines) by supplying a plurality of sets of same image display data to each data line simultaneously capability(see figures 1, 3; column

2, lines 26-29 and lines 59-68; and column 3, lines 1-8) and the driving ability is greater by using two driving devices(upper and lower drivers(2-5)) at the same time than one driving device. Maekawa et al teach Maekawa et al have disclosed the driving devices could be mounted on opposite side or same side(see column 4, lines 46-50).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kanbara(5,657,040) teaches an LCD display having a plurality of driving devices.

Ha(6,847,344) teaches an LCD display having a plurality of driving blocks.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 2, 2006

L. Y. Lao

Lun-yi Lao
Primary Examiner